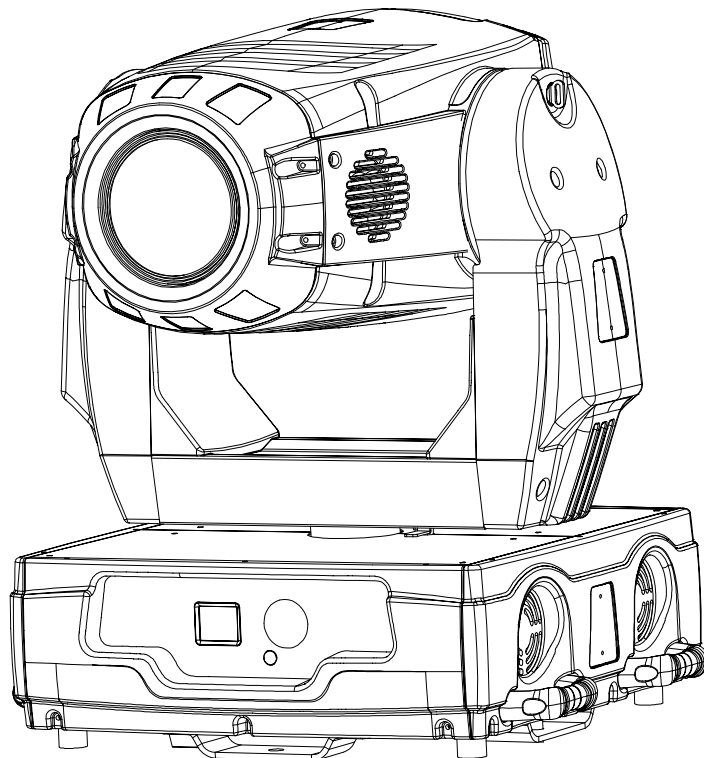


Futurelight®

BEDIENUNGSANLEITUNG USER MANUAL

PHS-1200 Pro-Head-Spot



Für weiteren Gebrauch aufbewahren!
Keep this manual for future needs!
Gardez ce mode d'emploi pour des
utilisations ultérieures!
Guarde este manual para posteriores usos.



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MULTI-LANGUAGE-INSTRUCTIONS

Inhaltsverzeichnis/Table of contents Sommaire/Contenido

Deutsch

EINFÜHRUNG	5
SICHERHEITSHINWEISE	5
BESTIMMUNGSGEMÄßE VERWENDUNG	7
GERÄTEBESCHREIBUNG	8
Features	8
Geräteübersicht	9
INSTALLATION	11
Lampeninstallation/Lampenwechsel	11
Lampenjustierung	12
Einsetzen/Austauschen von Gobos	12
Transportsicherung	13
Projektormontage	13
Anschluss an den DMX-512 Controller / Verbindung Projektor – Projektor	15
Anschluss ans Netz	16
BEDIENUNG	16
Stand Alone-Betrieb	16
DMX-gesteuerter Betrieb	17
Adressierung des Projektors	17
DMX-Protokoll	17
Control Board	23
Funktionen	25
Information	25
Konfiguration	26
Reset-Funktionen	28
Justierung	28
Interne Programme	28
Fehlermeldungen	29
REINIGUNG UND WARTUNG	29
Sicherungswechsel	30
TECHNISCHE DATEN	31

English

INTRODUCTION	32
SAFETY INSTRUCTIONS	32
OPERATING DETERMINATIONS	34
DESCRIPTION OF THE DEVICE	35
Features	35
Overview	36
INSTALLATION	38
Installing/Replacing the lamp	38
Lamp adjustment	39
Inserting/Exchanging gobos	39
Transport securing	40
Rigging	40
DMX-512 connection / connection between fixtures	42
Connection with the mains	43
OPERATION	43
Stand Alone operation	43
DMX-controlled operation	44
Addressing	44
DMX-protocol	44
Control Board	49

Function Mode	51
Information	51
Personality	52
Reset-functions	53
Effect Adjust	53
Users mode set	54
Edit program	54
Error Messages	54
CLEANING AND MAINTENANCE	55
Replacing the fuse	56
TECHNICAL SPECIFICATIONS	56

Français

INTRODUCTION	57
INSTRUCTIONS DE SÉCURITÉ	57
EMPLOI SELON LES PRESCRIPTIONS	59
DESCRIPTION DE L'APPAREIL	60
Features	60
Aperçue des parties	61
INSTALLATION	63
Installer/Remplacer la lampe	63
Ajustage de la lampe	64
Introduire/échanger gobos	64
Bloc du transport	65
Montage du projecteur	65
Connexions au contrôleur DMX-512 / raccord projecteur - projecteur	67
Alimentation	68
MANIEMENT	68
Opération Stand Alone	68
Contrôle par DMX	69
Codage du projecteur	69
Protocôle DMX	69
Control Board	75
Fonctions	77
Information	77
Configuration	78
Fonctions Reset	79
Ajustements	79
User modes	80
Programmes internes	80
Avis d'erreur et d'information	80
NETTOYAGE ET MAINTENANCE	81
Remplacer le fusible	82
CARACTÉRISTIQUES TECHNIQUES	83

INTRODUCCIÓN	84
INSTRUCCIONES DE SEGURIDAD	84
INSTRUCCIONES DE MANEJO	86
DESCRIPCIÓN DEL APARATO	87
Features	87
Descripción de las partes	88
INSTALACIÓN	90
Instalar/Reemplazar la lámpara	90
Ajuste de la lámpara	91
Insertar/reemplazar gobos	91
Seguro de transporte	92
Montaje del proyector	92
Conexión al controlador DMX / conexión proyector - proyector	94
Alimentación	95
OPERACIÓN	95
Operación Stand Alone	95
Control por DMX	96
Direccionamiento del proyector	96
Protocolo DMX	96
Control Board	102
Funciones	104
Información	104
Configuración	105
Ajuste de lámpara	106
Funciones Reset	106
Calibración	107
Programas internas	107
Avisos de error	107
LIMPIEZA Y MANTENIMIENTO	108
Reemplazar el fusible	109
ESPECIFICACIONES TÉCNICAS	110

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www.futurelight.com

USER MANUAL

Futurelight®

PHS-1200 Pro-Head-Spot



CAUTION!

Keep this device away from rain and moisture!
Unplug mains lead before opening the housing!

For your own safety, please read this user manual carefully before you initial start-up.

Every person involved with the installation, operation and maintenance of this device has to

- be qualified
- follow the instructions of this manual
- consider this manual to be part of the total product
- keep this manual for the entire service life of the product
- pass this manual on to every further owner or user of the product
- download the latest version of the user manual from the Internet

INTRODUCTION

Thank you for having chosen a FUTURELIGHT PHS-1200. You will see you have acquired a powerful and versatile device.

Unpack your PHS-1200.

SAFETY INSTRUCTIONS



CAUTION!

Be careful with your operations. With a dangerous voltage you can suffer a dangerous electric shock when touching the wires!

This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual.



Important:

Damages caused by the disregard of this user manual are not subject to warranty. The dealer will not accept liability for any resulting defects or problems.

If the device has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.

Please make sure that there are no obvious transport damages. Should you notice any damages on the A/C connection cable or on the casing, do not take the device into operation and immediately consult your local dealer.

This device falls under protection-class I. The power plug must only be plugged into a protection class I outlet. The voltage and frequency must exactly be the same as stated on the device. Wrong voltages or power outlets can lead to the destruction of the device and to mortal electrical shock.

Always plug in the power plug last. The power plug must always be inserted without force. Make sure that the plug is tightly connected with the outlet.

Never let the power-cord come into contact with other cables! Handle the power-cord and all connections with the mains with particular caution! Never touch them with wet hands, as this could lead to mortal electrical shock.

Never modify, bend, strain mechanically, put pressure on, pull or heat up the power cord. Never operate next to sources of heat or cold. Disregard can lead to power cord damages, fire or mortal electrical shock.

The cable insert or the female part in the device must never be strained. There must always be sufficient cable to the device. Otherwise, the cable may be damaged which may lead to mortal damage.

Make sure that the power-cord is never crimped or damaged by sharp edges. Check the device and the power-cord from time to time.

If extension cords are used, make sure that the core diameter is sufficient for the required power consumption of the device. All warnings concerning the power cords are also valid for possible extension cords.

Always disconnect from the mains, when the device is not in use or before cleaning it. Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord. Otherwise, the cable or plug can be damaged leading to mortal electrical shock. If the power plug or the power switch is not accessible, the device must be disconnected via the mains.

If the power plug or the device is dusty, the device must be taken out of operation, disconnected and then be cleaned with a dry cloth. Dust can reduce the insulation which may lead to mortal electrical shock. More severe dirt in and at the device should only be removed by a specialist.

There must never enter any liquid into power outlets, extension cords or any holes in the housing of the device. If you suppose that also a minimal amount of liquid may have entered the device, it must immediately be disconnected. This is also valid, if the device was exposed to high humidity. Also if the device is still running, the device must be checked by a specialist if the liquid has reduced any insulation. Reduced insulation can cause mortal electrical shock.

There must never be any objects entering into the device. This is especially valid for metal parts. If any metal parts like staples or coarse metal chips enter into the device, the device must be taken out of operation and disconnected immediately. Malfunction or short-circuits caused by metal parts may cause mortal injuries.

During the initial start-up some smoke or smell may arise. This is a normal process and does not necessarily mean that the device is defective.

Danger of burning! Never install the device on a highly flammable surfaces (e.g. fair carpet)!

Caution: During the operation, the housing becomes very hot.

Do not switch the device on and off in short intervals as this would reduce the lamp's life.

**HEALTH HAZARD!**

Never look directly into the light source, as sensitive persons may suffer an epileptic shock (especially meant for epileptics)!

Keep away children and amateurs!

Never leave this device running unattended.

OPERATING DETERMINATIONS

This device is a moving-head spot for creating decorative effects. This product is only allowed to be operated with an alternating current of 230 V, 50 Hz and was designed for indoor use only.

This device is designed for professional use, e.g. on stages, in discotheques, theatres etc.

Lighting effects are not designed for permanent operation. Consistent operation breaks will ensure that the device will serve you for a long time without defects.

Do not shake the device. Avoid brute force when installing or operating the device.

Never lift the fixture by holding it at the projector-head, as the mechanics may be damaged. Always hold the fixture at the transport handles.

When choosing the installation-spot, please make sure that the device is not exposed to extreme heat, moisture or dust. There should not be any cables lying around. Please make sure that the unit cannot be touched or bumped. You endanger your own and the safety of others!

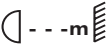
This device must never be operated or stockpiled in surroundings where splash water, rain, moisture or fog may harm the device. Moisture or very high humidity can reduce the insulation and lead to mortal electrical shocks. When using smoke machines, make sure that the device is never exposed to the direct smoke jet and is installed in a distance of 0.5 meters between smoke machine and device. The room must only be saturated with an amount of smoke that the visibility will always be more than 10 meters.

The ambient temperature must always be between -5° C and +45° C. Keep away from direct insulation (particularly in cars) and heaters.

The relative humidity must not exceed 50 % with an ambient temperature of 45° C.

This device must only be operated in an altitude between -20 and 2000 m over NN.

Never use the device during thunderstorms. Over voltage could destroy the device. Always disconnect the device during thunderstorms.

The symbol  determines the minimum distance from lighted objects. The minimum distance between light-output and the illuminated surface must be more than this value.

The device must only be installed on a non-flammable surface. In order to safeguard sufficient ventilation, leave 50 cm of free space around the device. Please note that heat-sensitive objects may be deformed or damaged by the emitted heat.

Make sure that the area below the installation place is blocked when rigging, derigging or servicing the fixture.

For overhead use (mounting height >100 cm), always fix the fixture with an appropriate safety-rope. Fix the safety-rope at the correct fixation points only. The safety-rope must never be fixed at the transport handles!

Only operate the fixture after having checked that the housing is firmly closed and all screws are tightly fastened.

The lamp must never be ignited if the objective-lens or any housing-cover is open, as discharge lamps may explode and emit a high ultraviolet radiation, which may cause burns.

The maximum ambient temperature $t_a = 45^\circ \text{C}$ must never be exceeded.

Operate the device only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the device. Most damages are the result of unprofessional operation!

Please use the original packaging if the device is to be transported.

Please consider that unauthorized modifications on the device are forbidden due to safety reasons!

Never remove the serial barcode from the device as this would make the guarantee void.

If this device will be operated in any way different to the one described in this manual, the product may suffer damages and the guarantee becomes void. Furthermore, any other operation may lead to dangers like short-circuit, burns, electric shock, lamp explosion, crash etc.

DESCRIPTION OF THE DEVICE

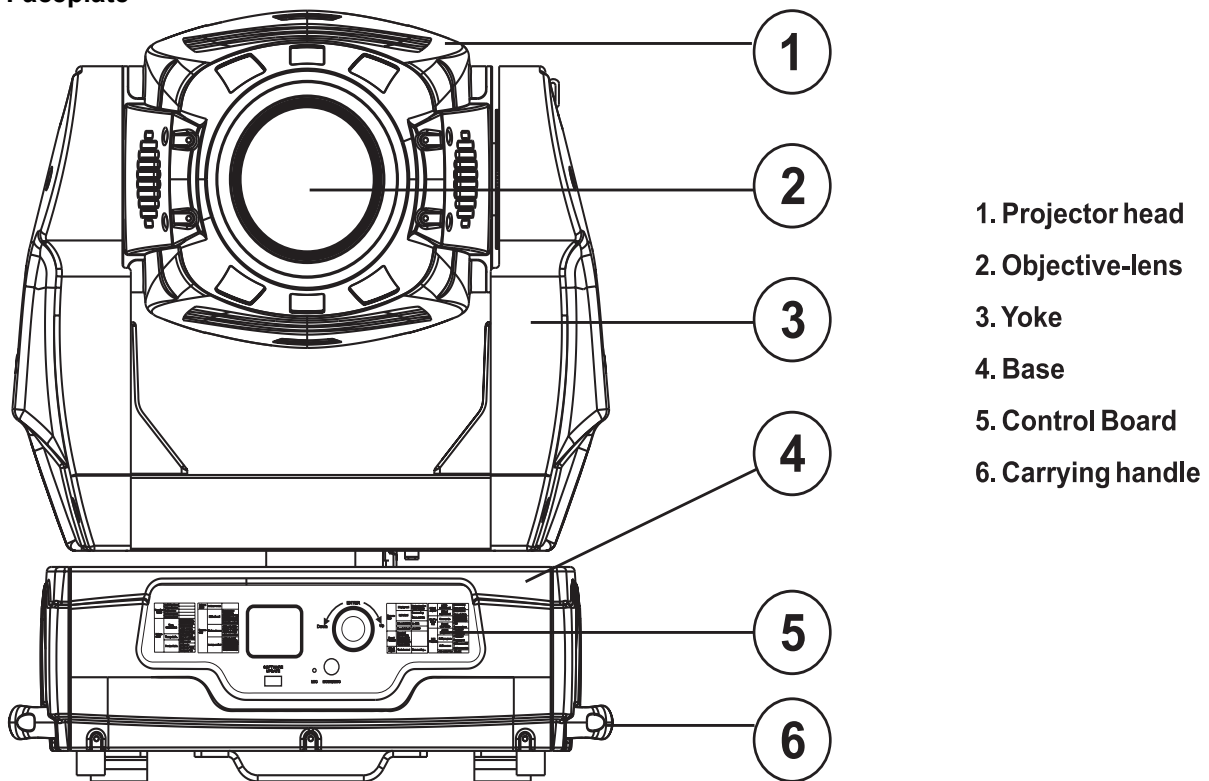
Features

High-Power Moving-Head

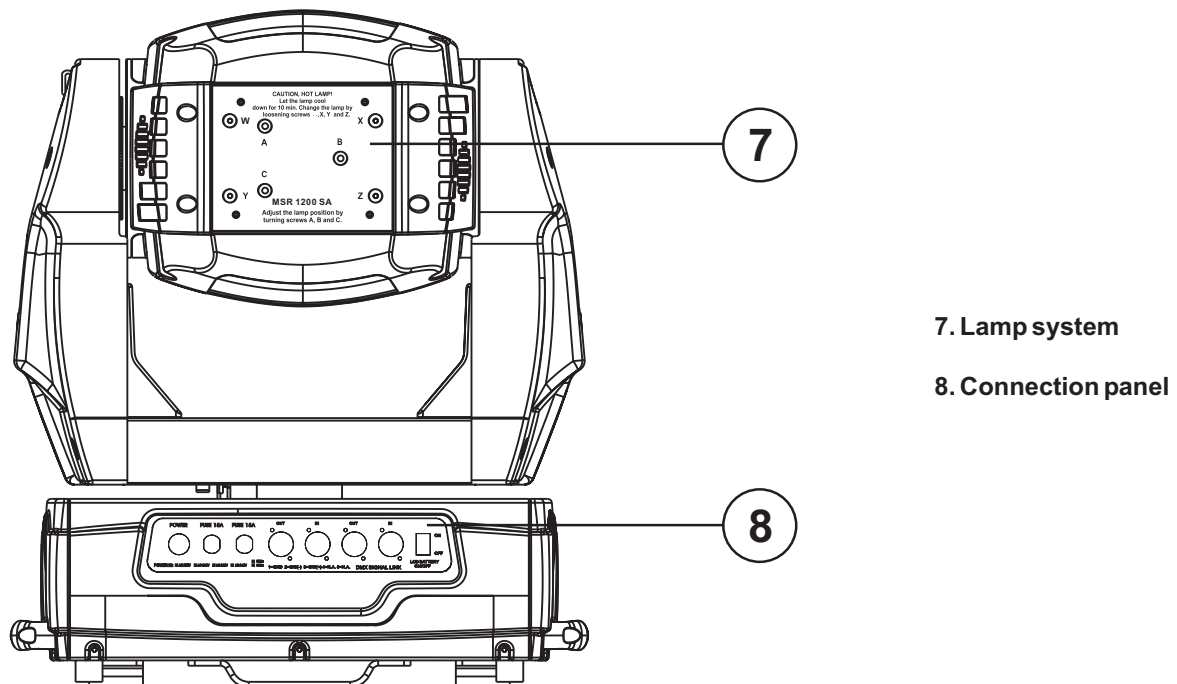
- Extreme light output of 1200 W
- Multi-lens-system for extremely bright and clear projections
- CMY colour mixture for indefinite colour variations
- Motorised colour-wheel with additional 4 discrete dichroic filters, 2 static gobos, 5600 K correction-filter plus open
- The colour-wheel can be individually equipped with colours/gobos
- Rainbow-effect with adjustable speed in both directions
- Preprogrammed colour- and gobo-macros
- Variable colour temperature correction via CTO-filter
- Slot-in gobo-system for exchanging gobos without tools
- Two gobo-wheels with 5 rotating gobos plus open each
- All gobos can be interchanged
- With gobo-shake function
- Effect-wheel with rotating 2-facet prism, 3-facet prism, 5-facet prism, 3D-prism and open
- Frost-filter for softer beam
- The prisms rotate in both directions and at different speeds, prism index function
- Macro-function for rotating gobos/rotating prism combinations
- Motorized focus
- Mechanic dimmer
- Motorized zoom
- Steplessly adjustable iris
- Preprogrammed variable/random iris/dimmer/shutter pulse effects
- Strobe-effect with 1-13 flashes per second via shutter
- Random strobe-effect
- Lightbeam with 17° - 32° radiation angle
- Coloured LCD-display
- Battery-buffered Control Board for operation time readouts etc.
- Control-Board with LCD-display and encoder for adjusting the DMX-starting address, Pan/Tilt-Reverse, Program, Reset, lamp on/off, operating hours
- DMX-controlled operation or stand alone operation with Master/Slave-function
- 250 preprogrammed scenes in Program Run for stand alone operation
- Number of scenes in Program Run can be changed individually
- The scenes in Program Run can be modified via the Control Board or via an external controller and loaded into the memory
- 10 built-in programs can be called up via DMX-controller
- Sound-controlled via built-in microphone
- Automatic position correction
- 8 or 16 bit resolution
- DMX-control via every standard DMX-controller

Overview

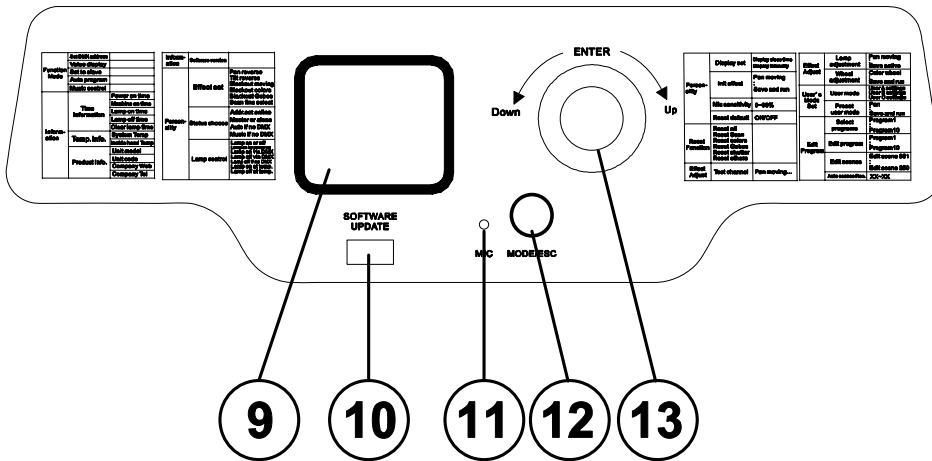
Faceplate



Rear panel

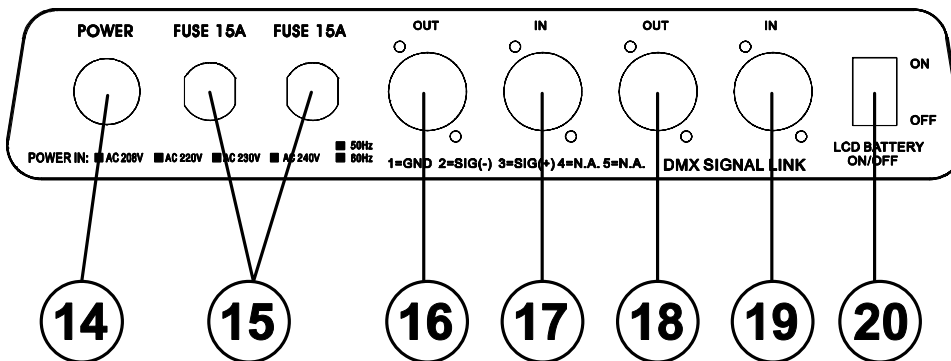


Control Board



- 9. LCD-Display
- 10. Upload-socket
- 11. Microphone
- 12. Mode/Escape button
- 13. Encoder

Connection panel



- 14. Power supply socket
- 15. Fuse holder
- 16. 3-PIN DMX output socket
- 17. 3-PIN DMX input socket
- 18. 5-PIN DMX output socket
- 19. 5-PIN DMX input socket
- 20. LCD battery selector

INSTALLATION

Installing/Replacing the lamp



DANGER TO LIFE!

Only install the lamp with the device switched off!
Unplug from mains before!

For the installation, you need one MSR 1200 SA lamp.

The lamp must only be changed when wearing appropriate protective clothing (protection glasses, protection gloves, helmet with sight, leather apron).



CAUTION!

The lamp has to be replaced when it is damaged
or deformed due to the heat!

The lamp life given by the manufacturer must never be exceeded. This is why you need to take notes on the operational time of the lamp or check the operating hour meter regularly and replace the lamp in time.

Keep exchanged lamp in a protective container and remove accordingly.

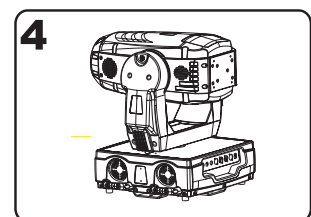
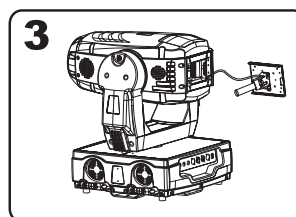
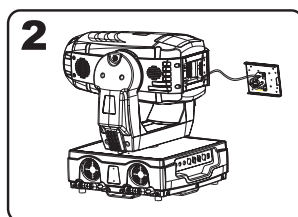
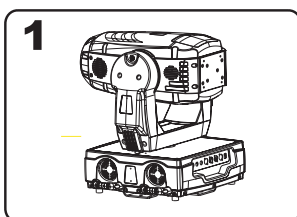
During the operation, the lamp reaches temperatures of up to 600° C.

Before replacing the lamp, unplug mains lead and let the lamp cool down (approx. 10 minutes).

During the installation do not touch the glass-bulbs bare-handed! Please follow the lamp manufacturer's notes!

Do not install lamps with a higher wattage! Lamps with a higher wattage generate temperatures the device was not designed for. Damages caused by non-observance are not subject to warranty.

Procedure:



Step 1: Unscrew the fixation screws W, X, Y, Z of the lamp system and carefully remove it from the housing.

Step 2: If replacing the lamp, remove the old lamp from the lamp holder.

Step 3: Insert the lamp into the lamp holder.

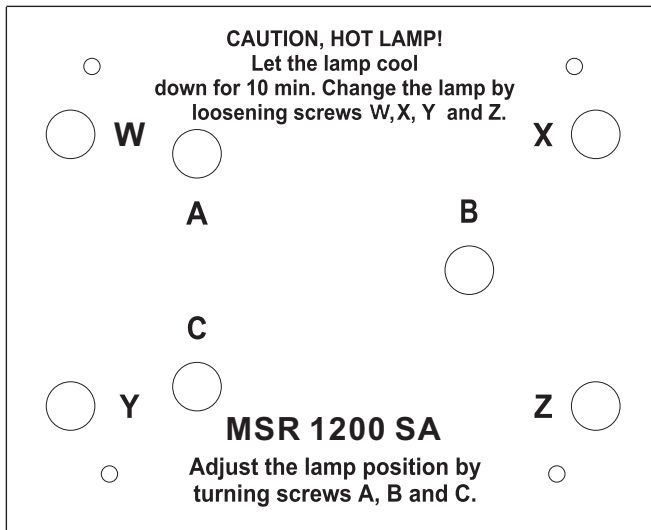
Step 4: Replace the lamp system in the housing and tighten the fixation screws.

Step 5: Adjust the lamp as described under lamp adjustment.



Do not operate this device with opened cover!

Lamp adjustment



The lampholder is aligned at the factory. Due to differences between lamps, fine adjustment may improve light performance.

Strike the lamp, open the shutter, set the dimmer intensity onto 100 % and direct the light towards a flat surface (wall). Center the hot-spot (the brightest part of the beam) using the 3 adjustment screws "A, B, C". Turn one screw at a time to drag the hot-spot diagonally across the projected image. If you cannot detect a hot-spot, adjust the lamp until the light is even.

To reduce a hot-spot, pull the lamp in by turning all three screws "A, B, C" clockwise $\frac{1}{4}$ -turn at a time until the light is evenly distributed.

If the light is brighter around the edge than it is in the center, or if light output is low, the lamp is too far back in the reflector. "Push" the lamp out by turning the screws "A, B, C" counterclockwise $\frac{1}{4}$ -turn at a time the light is bright and evenly distributed.

Inserting/Exchanging gobos



DANGER!
Install the gobos with the device switched off only.
Unplug from mains before!



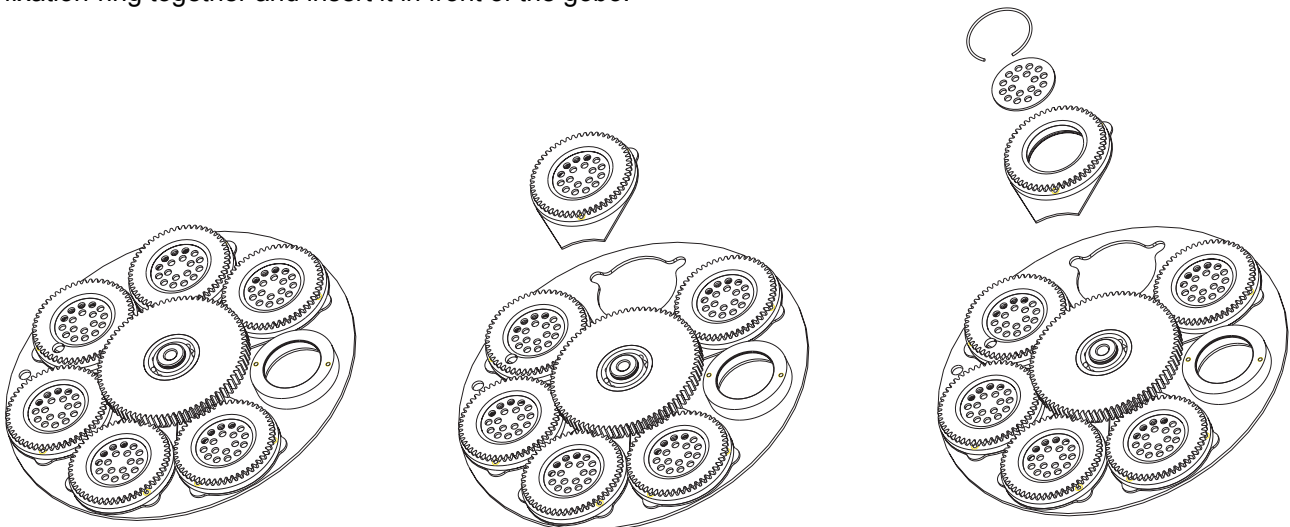
If you wish to use other forms and patterns as the standard-gobos, or if gobos are to be exchanged, please follow the instructions below:



CAUTION!
Never unscrew the screws of the rotating gobo as the ball bearing will otherwise be opened!



Remove the fixation-ring with an appropriate tool. Remove the gobo and insert the new gobo. Press the fixation-ring together and insert it in front of the gobo.





Please note!
Slot-in gobo-system for exchanging gobos without tools!
Inserting/Exchanging gobos as described above.



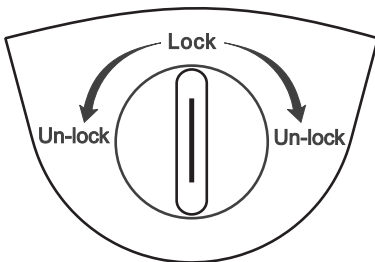
Transport securing

The PHS-1200 comes with locked transport securings in order to avoid damages.

Please note: All transport securing must be unlocked before operating the device!

TILT-securing:

Turn the two stop levers at the projector head from Lock to Unlock. Now, the projector head can be freely moved in the Y-direction.



PAN-securing:

Turn the stop levers at the bottom of the projector arm from Lock to Unlock. Now, the projector head can be freely moved in the X-direction.



Before transporting the device, please turn all stop levers from Unlock to Lock.

Rigging



DANGER TO LIFE!
Please consider the EN 60598-2-17 and the respective national norms during the installation! The installation must only be carried out by an authorized dealer!

The installation of the projector has to be built and constructed in a way that it can hold 10 times the weight for 1 hour without any harming deformation.

The installation must always be secured with a secondary safety attachment, e.g. an appropriate catch net. This secondary safety attachment must be constructed in a way that no part of the installation can fall down if the main attachment fails.

When rigging, derigging or servicing the fixture staying in the area below the installation place, on bridges, under high working places and other endangered areas is forbidden.

The operator has to make sure that safety-relating and machine-technical installations are approved by an expert before taking into operation for the first time and after changes before taking into operation another time.

The operator has to make sure that safety-relating and machine-technical installations are approved by an expert after every four year in the course of an acceptance test.

The operator has to make sure that safety-relating and machine-technical installations are approved by a skilled person once a year.

Procedure:

The projector should be installed outside areas where persons may walk by or be seated.

IMPORTANT! OVERHEAD RIGGING REQUIRES EXTENSIVE EXPERIENCE, including (but not limited to) calculating working load limits, installation material being used, and periodic safety inspection of all installation material and the projector. If you lack these qualifications, do not attempt the installation yourself, but instead use a professional structural rigger. Improper installation can result in bodily injury and/or damage to property.

The projector has to be installed out of the reach of people.

If the projector shall be lowered from the ceiling or high joists, professional trussing systems have to be used. The projector must never be fixed swinging freely in the room.

Caution: Projectors may cause severe injuries when crashing down! If you have doubts concerning the safety of a possible installation, do NOT install the projector!

Before rigging make sure that the installation area can hold a minimum point load of 10 times the projector's weight.



DANGER OF FIRE!

When installing the device, make sure there is no highly-inflammable material (decoration articles, etc.) within a distance of min. 0.5 m.



CAUTION!

Use 2 appropriate clamps to rig the fixture on the truss.
Follow the instructions mentioned at the bottom of the base.
Make sure that the device is fixed properly! Ensure that
the structure (truss) to which you are attaching the fixtures is secure.



The Moving-Head can be placed directly on the stage floor or rigged in any orientation on a truss without altering its operation characteristics (see the drawing).

The fixture's base enables to be mounted in two ways.

For overhead use (mounting height >100 cm), always install a safety-rope that can hold at least 12 times the weight of the fixture. You must only use safety-ropes with quick links with screw cap. Pull the safety-rope through the hole on the bottom of the base and over the trussing system etc. Insert the end in the quick link and tighten the fixation screw.

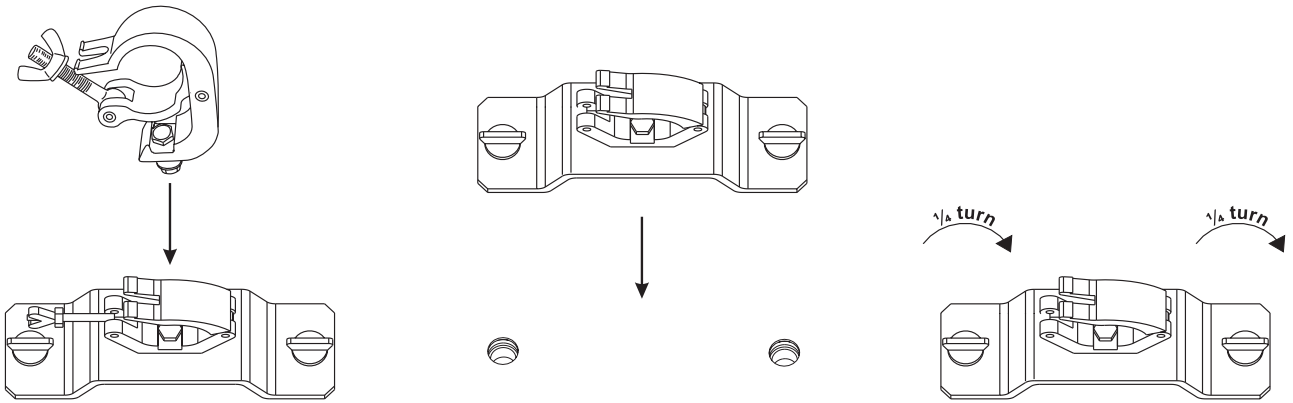
The maximum drop distance must never exceed 20 cm.

A safety rope which already hold the strain of a crash or which is defective must not be used again.



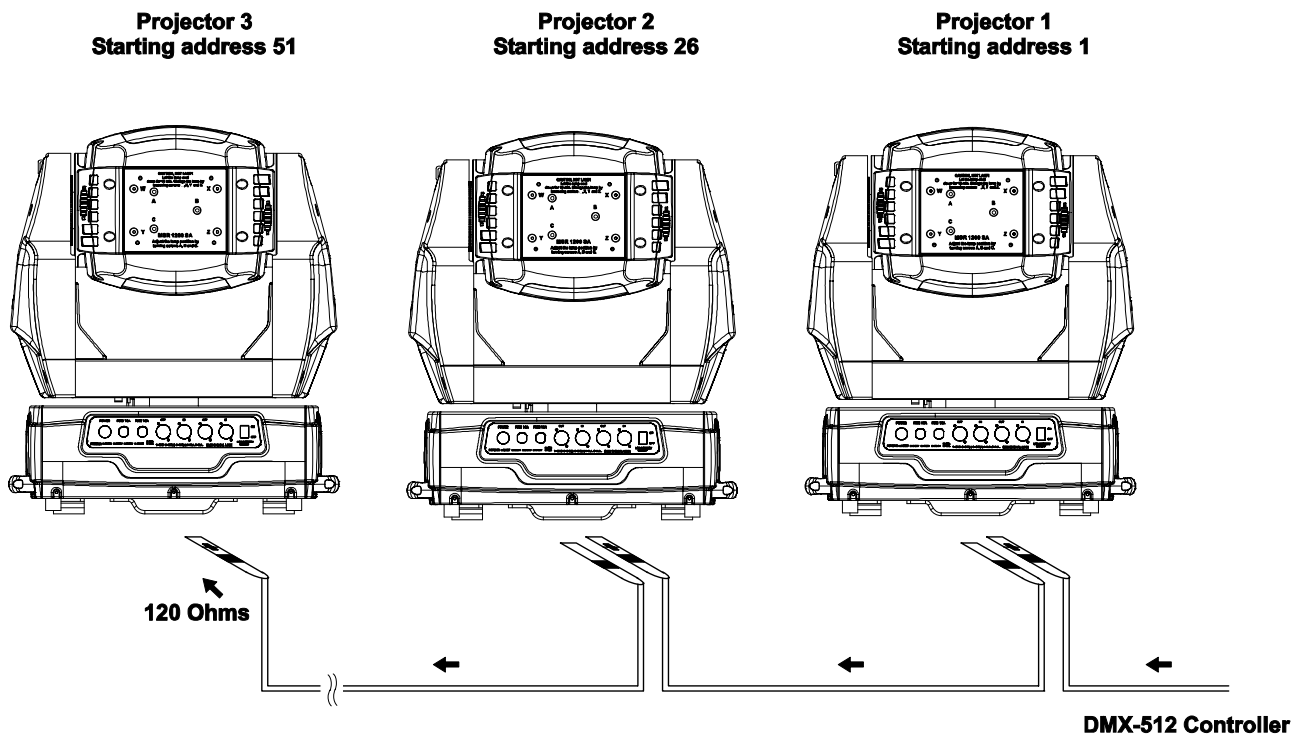
DANGER TO LIFE!

Before taking into operation for the first time, the installation has to be approved by an expert!



Screw one clamp each via a M12 screw and nut onto the Omega-holders.
Insert the quick-lock fasteners of the first Omega-holder into the respective holes on the bottom of the device. Tighten the quick-lock fasteners fully clockwise. Install the second Omega-holder.

DMX-512 connection / connection between fixtures



The wires must not come into contact with each other, otherwise the fixtures will not work at all, or will not work properly.



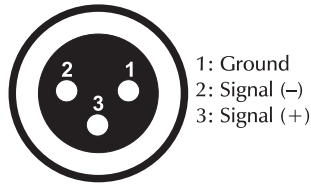
Please note, the starting address depends upon which controller is being used.



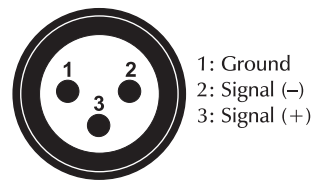
Only use a stereo shielded cable and 3-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

Occupation of the XLR-connection:

DMX-output
XLR mounting-socket:



DMX-input
XLR mounting-plug:



If you are using controllers with this occupation, you can connect the DMX-output of the controller directly with the DMX-input of the first fixture in the DMX-chain. If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter-cables.

Building a serial DMX-chain:

Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect one output with the input of the next fixture until all fixtures are connected.

Caution: At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120 Ω resistor between Signal (-) and Signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

Connection with the mains

Connect the device to the mains with the enclosed power supply cable.

The occupation of the connection-cables is as follows:

Cable	Pin	International
Brown	Live	L
Blue	Neutral	N
Yellow/Green	Earth	

The earth has to be connected!

If the device will be directly connected with the local power supply network, a disconnection switch with a minimum opening of 3 mm at every pole has to be included in the permanent electrical installation.

The device must only be connected with an electric installation carried out in compliance with the IEC-standards. The electric installation must be equipped with a Residual Current Device (RCD) with a maximum fault current of 30 mA.

Lighting effects must not be connected to dimming-packs.

OPERATION

After you connected the effect to the mains, the PHS-1200 starts running. During the Reset, the motors are trimmed and the device is ready for use afterwards.

Stand Alone operation

In the Stand Alone mode, the PHS-1200 can be used without controller. Disconnect the PHS-1200 from the controller and call the internal program.

Please refer to the instructions under Control Board, Functions, menu Auto program.

DMX-controlled operation

You can control the projectors individually via your DMX-controller. Every DMX-channel has a different occupation with different features. The individual channels and their features are listed under DMX-protocol.

Addressing

The Control Board allows you to assign the DMX starting address, which is defined as the first channel from which the PHS-1200 will respond to the controller.

If you set, for example, the address to channel 26, the PHS-1200 will use the channel 26 to 50 for control.

Please, be sure that you don't have any overlapping channels in order to control each PHS-1200 correctly and independently from any other fixture on the DMX-chain.

If several PHS-1200 are addressed similarly, they will work synchronically.

Turn the encoder for setting the desired starting address. Now you can start operating the PHS-1200 via your lighting controller.

Note:

The modes of DMX 512 data and lamp are shown via the display:

1. After switching on, the device will automatically detect whether DMX 512 data is received or not. If the data is received, the the display will show "**A.001**" with the actually set address. If there is no data received at the DMX-input, the display will flash.

This situation can occur if:

- the 3 PIN XLR plug (cable with DMX signal from controller) is not connected with the input of the device.
- the controller is switched off or defective, if the cable or connector is defective or the signal wires are swap in the input connector.

Note:

It's necessary to insert the XLR termination plug (with 120 Ohm) in the last lighting in the link in order to ensure proper transmission on the DMX data link.

2. If the lamp is on, the the display will show "**A00.1**" with the actually set address. If the lamp is off, the the display will show "**A001**" with the actually set address.

DMX-protocol

Control-channel 1 - Horizontal movement (Pan) (within 540°)

Push slider up in order to move the head horizontally (PAN).

Gradual head adjustment from one end of the slider to the other (0-255, 128-center).

The head can be stopped at any position you wish.

Control-channel 2 - Vertical movement (Tilt) (within 265°)

Push slider up in order to move the head vertically (TILT).

Gradual head adjustment from one end of the slider to the other (0-255, 128-center).

The head can be stopped at any position you wish.

Control-channel 3 - Pan/Tilt-speed

Decimal	Hexad.	Percentage	S/F	Feature
0225	00E1	0%88%	F	Decreasing speed
226235	E2EB	89%92%	S	Blackout at Pan/Tilt-movement
236245	ECF5	93%96%	S	Blackout at colour/gobo-change
246255	F6FF	96%100%	S	No function

Control-channel 4 - Colour-wheel

Linear colour change following the movement of the slider.

In this way you can stop the colour-wheel in any position.

Decimal	Hexad.	Percentage	S/F	Feature
015	000F	0%6%	S	Open / white
1631	101F	6%12%	S	Colored gobo 1
3247	202F	13%18%	S	Colored gobo 2
4863	303F	19%25%	S	Red
6479	404F	25%31%	S	Blue
8095	505F	31%37%	S	Green
96111	606F	38%44%	S	Yellow
112127	707F	44%50%	S	CTB (Convert to blue)
128187	80BB	50%73%	F	Forwards rainbow effect with decreasing speed
188193	BC C1	74%76%	S	No rotation
194255	C2FF	76%100%	F	Backwards rainbow effect with increasing speed

Control-channel 5 - Cyan

Decimal	Hexad.	Percentage	S/F	Feature
0255	00FF	0%100%	F	Cyan (0=white, 255=cyan)

Control-channel 6 - Magenta

Decimal	Hexad.	Percentage	S/F	Feature
0255	00FF	0%100%	F	Magenta (0=white, 255=magenta)

Control-channel 7 - Yellow

Decimal	Hexad.	Percentage	S/F	Feature
0255	00FF	0%100%	F	Yellow (0=white, 255=yellow)

Control-channel 8 - CTO (Convett to orange)

Decimal	Hexad.	Percentage	S/F	Feature
0255	00FF	0%100%	F	CTO (0=white, 255=CTO)

Control-channel 9 - CMY and dimmer speed

Decimal	Hexad.	Percentage	S/F	Feature
0255	00FF	0%100%	F	Speed adjustment max to min

Control-channel 10 - CMY colour macros

Decimal	Hexad.	Percentage	S/F	Feature
07	0007	0%3%	S	Neutral
815	080F	3%6%	S	Macro 1
1623	1017	6%9%	S	Macro 2
2431	181F	9%12%	S	Macro 3
3239	2027	13%15%	S	Macro 4
4047	282F	16%18%	S	Macro 5
4855	3037	19%22%	S	Macro 6
5663	383F	22%25%	S	Macro 7
6471	4047	25%28%	S	Macro 8
7279	484F	28%31%	S	Macro 9
8087	5057	31%34%	S	Macro 10
8895	585F	35%37%	S	Macro 11
96103	6067	38%40%	S	Macro 12
104111	686F	41%44%	S	Macro 13

112	119	70	77	44%	47%	S	Macro 14
120	127	78	7F	47%	50%	S	Macro 15
128	135	80	87	50%	53%	S	Macro 16
136	143	88	8F	53%	56%	S	Macro 17
144	151	90	97	56%	59%	S	Macro 18
152	159	98	9F	60%	62%	S	Macro 19
160	167	A0	A7	63%	65%	S	Macro 20
168	175	A8	AF	66%	69%	S	Macro 21
176	183	B0	B7	69%	72%	S	Macro 22
184	191	B8	BF	72%	75%	S	Macro 23
192	199	C0	C7	75%	78%	S	Macro 24
200	207	C8	CF	78%	81%	S	Macro 25
208	215	D0	D7	82%	84%	S	Macro 26
216	223	D8	DF	85%	87%	S	Macro 27
224	231	E0	E7	88%	91%	S	Macro 28
232	239	E8	EF	91%	94%	S	Macro 29
240	247	F0	F7	94%	97%	S	Macro 30
248	255	F8	FF	97%	100%	S	Random CMY

Control-channel 11 - Rotating gobo-wheel, gobo shake 1

Decimal	Hexad.	Percentage	S/F	Feature	
014	000E	0%5%	S	Open	
1529	0F1D	6%11%	S	Gobo 1	
3044	1E2C	12%17%	S	Gobo 2	
4559	2D3B	18%23%	S	Gobo 3	
6074	3C4A	24%29%	S	Gobo 4	
7589	4B59	29%35%	S	Gobo 5	
90109	5A6D	35%43%	F	Gobo 1 shake with increasing speed	
110129	6E81	43%51%	F	Gobo 2 shake with increasing speed	
130149	8295	51%58%	F	Gobo 3 shake with increasing speed	
150169	96A9	59%66%	F	Gobo 4 shake with increasing speed	
170189	AABD	67%74%	F	Gobo 5 shake with increasing speed	
190255	BEFF	75%100%	F	Cont. gobo-wheel rotation with increasing speed	

Control-channel 12 - Rotating gobo index, gobo rotation 1

Decimal	Hexad.	Percentage	S/F	Feature			
0	127	00	7F	0%	50%	S	Gobo indexing
128	187	80	BB	50%	73%	F	Forwards gobo rotation with decreasing speed
188	193	BC	C1	74%	76%	S	No rotation
194	255	C2	FF	76%	100%	F	Backwards gobo rotation with increasing speed

Control-channel 13 - Rotating gobo-wheel, gobo shake 2

Decimal	Hexad.	Percentage	S/F	Feature
014	000E	0%5%	S	Open
1529	0F1D	6%11%	S	Gobo 1
3044	1E2C	12%17%	S	Gobo 2
4559	2D3B	18%23%	S	Gobo 3
6074	3C4A	24%29%	S	Gobo 4
7589	4B59	29%35%	S	Gobo 5
90109	5A6D	35%43%	F	Gobo 1 shake with increasing speed
110129	6E81	43%51%	F	Gobo 2 shake with increasing speed

130	149	82	95	51%	58%	F	Gobo 3 shake with increasing speed
150	169	96	A9	59%	66%	F	Gobo 4 shake with increasing speed
170	189	AA	BD	67%	74%	F	Gobo 5 shake with increasing speed
190	255	BE	FF	75%	100%	F	Cont. gobo-wheel rotation with increasing speed

Control-channel 14 - Rotating gobo index, gobo rotation 2

Decimal	Hexad.	Percentage	S/F	Feature			
0	127	00	7F	0%	50%	S	Gobo indexing
128	187	80	BB	50%	73%	F	Forwards gobo rotation with decreasing speed
188	193	BC	C1	74%	76%	S	No rotation
194	255	C2	FF	76%	100%	F	Backwards gobo rotation with increasing speed

Control-channel 15 - Prism-wheel

Decimal	Hexad.	Percentage	S/F	Feature			
0	25	00	19	0%	10%	S	Open
26	51	1A	33	10%	20%	S	Prism 1
52	77	34	4D	20%	30%	S	Prism 2
78	103	4E	67	31%	40%	S	Prism 3
104	127	68	7F	41%	50%	S	Prism 4
128	135	80	87	50%	53%	S	Macro 1
136	143	88	8F	53%	56%	S	Macro 2
144	151	90	97	56%	59%	S	Macro 3
152	159	98	9F	60%	62%	S	Macro 4
160	167	A0	A7	63%	65%	S	Macro 5
168	175	A8	AF	66%	69%	S	Macro 6
176	183	B0	B7	69%	72%	S	Macro 7
184	191	B8	BF	72%	75%	S	Macro 8
192	199	C0	C7	75%	78%	S	Macro 9
200	207	C8	CF	78%	81%	S	Macro 10
208	215	D0	D7	82%	84%	S	Macro 11
216	223	D8	DF	85%	87%	S	Macro 12
224	231	E0	E7	88%	91%	S	Macro 13
232	239	E8	EF	91%	94%	S	Macro 14
240	247	F0	F7	94%	97%	S	Macro 15
248	255	F8	FF	97%	100%	S	Macro 16

Control-channel 16 - Rotating prism index, prism rotation

Decimal	Hexad.	Percentage	S/F	Feature			
0	127	00	7F	0%	50%	S	Prism indexing
128	187	80	BB	50%	73%	F	Forwards prism rotation with decreasing speed
188	193	BC	C1	74%	76%	S	No rotation
194	255	C2	FF	76%	100%	F	Backwards prism rotation with increasing speed

Control-channel 17 - Focus

Decimal	Hexad.	Percentage	S/F	Feature
0 255	00 FF	0% 100%	F	Continuous adjustment from near to far

Control-channel 18 - Stepless Zoom

Decimal	Hexad.	Percentage	S/F	Feature
0 255	00 FF	0% 100%	F	Zoom adjustment from small to big

Control-channel 19 - Iris

Decimal	Hexad.	Percentage	S/F	Feature
0191	00BF	0%75%	F	Max. diameter to min. diameter
192223	C0DF	75%87%	F	Pulse opening with decreasing speed
224255	E0FF	88%100%	F	Pulse closing with increasing speed

Control-channel 20 - Shutter, strobe

Decimal	Hexad.	Percentage	S/F	Feature
031	001F	0%12%	S	Shutter closed
3263	203F	13%25%	S	No function (shutter open)
6495	405F	25%37%	F	Strobe-effect with increasing speed
96127	607F	38%50%	S	No function (shutter open)
128159	809F	50%62%	F	Pulse-effect in sequences
160191	A0BF	63%75%	S	No function (shutter open)
192223	C0DF	75%87%	F	Random strobe-effect with increasing speed
224255	E0FF	88%100%	S	No function (shutter open)

Control-channel 21 - Dimmer intensity

Decimal	Hexad.	Percentage	S/F	Feature
0255	00FF	0%100%	F	Gradual adjustment of the dimmer intensity from 0 to 100 %

Control-channel 22 - Frost

Decimal	Hexad.	Percentage	S/F	Feature
0191	00BF	0%75%	F	Frost from 0 to 100 %
192223	C0DF	75%87%	F	Pulse opening with decreasing speed
224254	E0FE	88%100%	F	Pulse closing with increasing speed
255255	FFFF	100%100%	F	100 % frost

Control-channel 23 - Switching the lamp, Reset, internal programs

Decimal	Hexad.	Percentage	S/F	Feature
031	001F	0%12%	S	Normal colour-change, search position via shortest distance
3263	203F	13%25%	S	Colour-change at every position, search position via shortest distance
6479	404F	25%31%	S	Lamp on
8085	5055	31%33%	S	Reset all motors
8687	5657	34%34%	S	Reset only Pan/Tilt
8889	5859	35%35%	S	Reset only colors
9091	5A5B	35%36%	S	Reset only gobo
9293	5C5D	36%36%	S	Reset only shutter and/or dimmer
9495	5E5F	37%37%	S	Reset other motors
96111	606F	38%44%	S	Internal program 1
112127	707F	44%50%	S	Internal program 2
128143	808F	50%56%	S	Internal program 3
144159	909F	56%62%	S	Internal program 4
160175	A0AF	63%69%	S	Internal program 5
176191	B0BF	69%75%	S	Internal program 6
192207	C0CF	75%81%	S	Internal program 7
208223	D0DF	82%87%	S	Internal program 8
224239	E0EF	88%94%	S	Lamp off
240255	F0FF	94%100%	S	Music control

Control-channel 24 - Pan-movement with 16 Bit-resolution**Control-channel 25 - Tilt-movement with 16 Bit-resolution**

Control Board

	Main menu	Sub menu	Display	Function
Function Mode	Set DMX address			DMX address setting
	Value display			DMX value display
	Set to Slave			Slave setting
	Auto program			Auto program
	Music control			Music control
Information	Time information	Power on time	XXXX	Individual fixture running time
		Machine on time	XXXX	Fixture running time
		Lamp on time	XXXX	Lamp running time
		Lamp off time	XXXX	Lamp off time
		Clear Lamp time	("Please wait...")	Clear lamp time
	Temp. Info.	System Temp	XX° C	Ambient temperature
		Inside Head Temp	XXX° C	Inside temperature
	Product Info.	Unit model		Unit model
		Unit code		Unit code
		Company WEB		Company WEB
		Company Tel		Company Tel
	Software version	IC01-Ver 1.0... ICXX-Ver 9.9		Software version of each IC
Personality	Effect Set	Pan Reverse	ON/OFF	Reverse movement
		Tilt Reverse	ON/OFF	
		Blackout with movem.	ON/OFF	Blackout with PAN/TILT movement or color/gobo wheel moving
		Blackout with colors	ON/OFF	
		Blackout with gobos	ON/OFF	
		16-bit movement	ON/OFF	
	Status choose	Addr. set online	ON/OFF	Add. via DMX Master/Alone switch Auto run if no DMX Music contr. /no DMX
		Master or Alone	Master/Alone	
		Auto if no DMX	ON/OFF	
		Music if no DMX	ON/OFF	
	Lamp control	Lamp on or off	ON/OFF	Lamp on/off
		Lamp on by power on	ON/OFF	Lamp on/off / Power
		Lamp on via DMX	ON/OFF	Lamp on via DMX
		Lamp off via DMX	ON/OFF	Lamp off via DMX
		Lamp off if no DMX	ON/OFF	Lamp off if no DMX
		Lamp on at temp.	XX, 10-59	Lamp restart at temp.
		Lamp off at temp.	XXX, 60-159	Lamp off at temp.
	Display set	Display close time	05 M, 02-59	Display shutoff time
		Display intensity	80 %, 20~99%	LCD brightness
	Init effect	PAN Moving	PAN Moving=XXX	Initial effect position
		:	:	
	Mic sensitivity	Save and run	("Please wait...")	Sensitivity of Mic.
		70 %, 0~99%		

Reset function	Reset default	ON/OFF		Restore factory sett.
	Reset All Reset Scan Reset Colors Reset Gobos Reset Shutter Reset Others			Reset all motors Reset only Pan/Tilt Reset only colors Reset only gobo Reset only shutter and/or dimmer Reset other motors
Effect Adjust	Test channel	PAN Moving...		Test function
	Lamp adjustment	PAN Moving : Save Active	PAN Moving=XXX : ("Please wait...")	Lamp adjustment
	Wheel adjustment	Color wheel : Save and run	Color wheel=XXX : ("Please wait...")	Wheel adjustment
User's Mode Set	User mode	User A settings User B settings User C settings		User's mode to change channel numbers
	Preset User mode	PAN : Save and run	PAN = CH NO.01 : ("Please wait...")	Preset User modes
Edit Program	Select Programs	Program 1 : Program 10		Select programs to be run
	Edit program	Program 1 : Program 10	Program Test Start step End step	Testing program Program in loop Save and exit
	Edit scenes	Edit Scene 001 : Edit Scene 250	Input by outside Save and Active Scene Time Pan, Tilt, ...	Save and automatically return manual scenes edit
	Auto scenes Rec.	XXX~XXX		Automat. scenes rec

The Control Board offers several features: you can simply set the starting address, switch on and off the lamp, run the pre-programmed program or make a reset.

The main menu is accessed by pressing the Mode/Esc-button until the display is lit. Browse through the menu by turning the encoder. Press the encoder in order to select the desired menu. You can change the selection by turning the encoder. Press the encoder in order to confirm. You can leave every mode by pressing the Mode/Esc-button. The functions provided are described in the following sections.

Function Mode

DMX address setting

With this function, you can adjust the desired DMX-address via the Control Board.

- Select **“Set DMX address”** via the encoder.
- Press the encoder, adjust the DMX address by turning the encoder.
- Press the encoder to confirm.
- Press the Mode/Esc-button in order return to the main menu.

Display the DMX 512 value of each channel

With this function you can display the DMX 512 value of each channel. The display automatically shows the channel with a value changing.

Slave setting

With this function, you can define the device as slave.

Auto Program

With this function, you can run the internal program. You can select the desired program under **“Select program”**. You can set the number of steps under **“Edit program”**. You can edit the individual scenes under **“Edit scenes”**. With this function, you can run the individual scenes either automatically, i.e. with the adjusted Step-Time.

Music control

With this function, you can run the internal program sound-controlled.

Information

Time information

Power on time

With this function, you can display the temporary running time of the device from the last power on. The display shows“XXXX”, “X” stands for the number of hours. The counter is resetted after turning the device off.

Machine on time

With this function, you can display the running time of the device. The display shows“XXXX”, “X” stands for the number of hours.

Lamp on time

With this function, you can display the running time of the lamp. The display shows“XXXX”, “X” stands for the number of hours.

Lamp off time

With this function, you can display the temporary running time of the lamp from the last lamp on. The display shows“XXXX”, “X” stands for the number of hours. The counter is resetted after turning the lamp off.

Clear lamp time

With this function you can clear the running time of the lamp. Please clear the lamp time every time you replace the lamp.

- Select **“Clear lamp time”** by turning the encoder.
- Press the encoder, the display shows “ON” or “OFF”.
- Press the encoder to confirm.
- Press the Mode/Esc-button in order to return to the main menu.

Temp. Info.

System Temp

With this function you can display the temperature in the projector base (near LCD-display) in Celsius.

Inside head Temp

With this function you can display the temperature in the projector-head (near CMY-filter) in Celsius.

Product Info.

Within this menu, you can find the data concerning the type, serial number, Internet and phone number.

Software version

With this function you can display the software version of the device.

- Select "**Software version**" by turning the encoder.
- Press the encoder, the display shows "**V-X.X**", "X.X" stands for the version number, e.g. "V-1.0", "V-2.6".
- Turn the encoder in order to read the version of every individual IC.
- Press the Mode/Esc-button in order to return to the main menu.

Personality

Effect set

Pan Reverse

With this function you can reverse the Pan-movement.

Tilt Reverse

With this function you can reverse the Tilt-movement.

Blackout with movement

With this function, you can switch the DMX-function Blackout with Pan/Tilt-movement (DMX-channel 3, values 226-235) on or off.

Blackout with colors

With this function, you can switch the DMX-function Blackout with colour-change (DMX-channel 3, values 236-245) on or off.

Blackout with gobos

With this function, you can switch the DMX-function Blackout with gobo-change (DMX-channel 3, values 236-245) on or off.

16-bit movement

With this function you can switch the device from 16 bit to 8 bit resolution.

- Select "**16-bit movement**" by turning the encoder.
- Press the encoder, the display shows "ON" or "OFF".
- Turn the encoder to select "ON" in order to set 16 bit, or "OFF" in order to set 8 bit. The channels PAN Fine and TILT Fine will be disabled.
- Press the encoder to confirm.
- Press the Mode/Esc-button in order to return to the main menu.

Status choose

Address set online

With this function, you can adjust the desired DMX-address via an external controller.

- Select "**Address set online**" by turning the encoder.
- Press the encoder, the display shows "ON" or "OFF".
- Turn the encoder to select "ON" if you wish to enable this function or "OFF" if you don't.
- Press the encoder to confirm.
- Press the Mode/Esc-button in order to return to the main menu.
- On the controller, set the DMX-value of channel 1 to "7".
- Set the DMX-value of channel 2 to "7" or "8". When set to "7" you can adjust the starting address between 1 and 255. When set to "8" you can adjust the starting address between 256 and 511.
- Set the DMX-value of channel 3 to the desired starting address. If you want to set the starting address to 57, set channel 1 to "7", channel 2 to "7" and channel 3 to "57". If you want to set the starting address to 420, set channel 1 to "7", channel 2 to "8" and channel 3 to "164" ($256+164=420$).
- Wait for approx. 20 seconds and the unit will carry out a reset. After that, the new starting address is set.

Master or Alone

With this function, you can set the status of the internal program run. The selection "Alone" means Stand Alone-mode and "Master" that the device is defined as master.

Lamp control

Lamp on/off

With this function you can switch the lamp on or off via the Control Board.

- Select "**Lamp on/off**" by turning the encoder.
- Press the encoder, the display shows "ON" or "OFF".

- Turn the encoder to select “**ON**” if you wish to strike the lamp or “**OFF**” in order to switch it off.
- Press the encoder to confirm.
- Press the Mode/Esc-button in order to return to the main menu.

Lamp on/off by power on

With this function you can select if the the lamp will be switched on when switching the power on. Select “**ON**” by turning the encoder if you wish to enable this function or “**OFF**” if you don’t.

Lamp on via external controller

With this function you can select if you can switch the lamp on via an external controller (DMX-channel 22, value 64-79). Select “**ON**” by turning the encoder if you wish to enable this function or “**OFF**” if you don’t.

Lamp off via external controller

With this function you can select if you can switch the lamp off via an external controller (DMX-channel 22, value 224-239). Select “**ON**” by turning the encoder if you wish to enable this function or “**OFF**” if you don’t.

Lamp Off if no DMX

With this function you can select to switch off the lamp off automatically if there is no DMX signal). Select “**ON**” by turning the encoder if you wish to enable this function or “**OFF**” if you don’t.

Lamp on at temp.

With this function you can set the inside temperature from which the projector will restrike the lamp after automatic lamp shutoff.

Lamp off at temp.

With this function you can set the inside temperature at which the projector will automatically switch the lamp off. Turn the encoder to select the maximum inside temperature between 60° C and 159° C. Inside temperatures below 90° C are not critical. 90° C and more should lead to the lamp being switched off. Please note that the outside temperature should not exceed 45° C.

Display set**Display close time**

With this function you can shut off the LED display after 2 to 59 minutes. Turn the encoder in order to select the desired shut off time.

Display intensity

With this function, you can adjust the display-intensity from 20 % to 99 %. Turn the encoder in order to select the desired intensity.

Init effect

With this function, you can adjust with which value the respective channels will start.

Mic sensitivity

With this function, you can select the desired microphone sensitivity between 20 % and 99 %.

Reset-functions

With this function you can Reset the device via the Control Board. You can select the different Reset-functions by turning the encoder.

Restore factory settings

With this function you can restore the factory settings of the device. All settings will be set back to the default values (shaded). Any edited scenes will be lost.

Effect Adjust**Test function of each channel**

With this function you can test each channel on its (correct) function.

Lamp adjustment

With this function, you can adjust the lamp more easily. All effects will be canceled, the shutter opens and the dimmer intensity will be set to 100 %. With the individual functions, you can focus the light on a flat surface (wall) and perform the fine lamp adjustment.

Wheel adjustment

With this function, you can calibrate and adjust the effect wheels to their correct positions.

Users mode set**User mode**

With this function, you can create user defined channel orders.

Preset User mode

With this function, you can adjust the Prest user defined channel order.

Edit program**Select program**

With this function, you can select the program for the Program Run.

Edit program

With this function, you can edit the internal programs.

Edit scenes

With this function, you can edit the scenes of the internal programs.

Auto scenes rec

The PHS-1200 features an integrated DMX-recorder by which you can transmit the programmed scenes from your DMX-controller to the PHS-1200. Adjust the desired scene numbers via the encoder (from – to). When you call up the scenes at your controller, they will automatically be transmitted to the PHS-1200.

Error Messages

When you turn on the fixture, it will make a reset first. The display may show an error message while there are problems with one or more channels. The error message stands for the channels equipped with a testing sensor.

For example, when the display shows “Color Wheel”, it means there is some error in the color wheel channel. If there are some errors on several channels at the same time, you may see the error messages flash repeatedly for 5 times, and then the fixture will generate a reset signal, all the stepper motors will reset. If the error messages maintain after performing reset more than 3 times, it will detect whether the fixture has more than 3 errors. If the fixture has more than 3 errors (including 3 errors), all the channels can not work properly; but if the fixture has less than 3 errors, only the channels which have errors can not work properly, others can work as usual.

The respective error message will appear after the reset of the fixture if the channels magnetic-indexing circuit malfunction (sensor failed or magnet missing) or the stepping-motor is defective (or its driving IC on the main PCB). The channel feature is not located in the default position after the reset.

The different error messages are:

PAN Moving	Yellow COLOR	GOBO Rotation 2
TILT Moving	CTO COLOR	Prism
COLOR Wheel	Rotation GOBO 1	Prism Rotation
Cyan COLOR	GOBO Rotation 1	Focus error
Magenta COLOR	Rotation GOBO 2	Iris

CLEANING AND MAINTENANCE

The operator has to make sure that safety-relating and machine-technical installations are inspected by an expert after every four years in the course of an acceptance test.

The operator has to make sure that safety-relating and machine-technical installations are inspected by a skilled person once a year.

The following points have to be considered during the inspection:

- 1) All screws used for installing the devices or parts of the device have to be tightly connected and must not be corroded.
- 2) There must not be any deformations on housings, fixations and installation spots (ceiling, suspension, trussing).
- 3) Mechanically moved parts like axles, eyes and others must not show any traces of wearing (e.g. material abrading or damages) and must not rotate with unbalances.
- 4) The electric power supply cables must not show any damages, material fatigue (e.g. porous cables) or sediments. Further instructions depending on the installation spot and usage have to be adhered by a skilled installer and any safety problems have to be removed.



DANGER TO LIFE!

Disconnect from mains before starting maintenance operation!

We recommend a frequent cleaning of the device. Please use a moist, lint-free cloth. Never use alcohol or solvents!



CAUTION!

The lens has to be replaced when it is obviously damaged, so that its function is impaired, e. g. due to cracks or deep scratches!

The objective lens will require weekly cleaning as smoke-fluid tends to building up residues, reducing the light-output very quickly. The cooling-fans should be cleaned monthly.

The PHS-1200 is equipped with two dust protection filters inside the projector head. These must be cleaned in six month intervals in order to guarantee perfect air circulation.

Procedure:

Step 1: Unscrew the fixation screws of the housing cover.

Step 2: Remove the housing cover.

Step 3: Remove the dust protection filters and clean them.

Step 4: Replace the dust protection filters in the housing and tighten the fixation screws.

Step 5: Replace the housing cover and tighten the fixation screws.



Do not operate this device with opened cover!

The gobos may be cleaned with a soft brush. The interior of the fixture should be cleaned at least annually using a vacuum-cleaner or an air-jet.

The dichroic colour-filters, the gobo-wheel and the internal lenses should be cleaned monthly.

To ensure a proper function of the gobo-wheel, we recommend lubrication in six month intervals. The quantity of oil must not be excessive in order to avoid that oil runs out when the gobo-wheel rotates.

There are no serviceable parts inside the device except for the lamp and the fuse. Maintenance and service operations are only to be carried out by authorized dealers.

Please refer to the instructions under "Installing/Replacing the lamp".

Replacing the fuse

If the lamp burns out, the fine-wire fuse of the device might fuse, too. Only replace the fuse by a fuse of same type and rating.

Before replacing the fuse, unplug mains lead.

Procedure:

- Step 1:** Unscrew the fuseholder on the rearpanel with a fitting screwdriver from the housing (anti-clockwise).
- Step 2:** Remove the old fuse from the fuseholder.
- Step 3:** Install the new fuse in the fuseholder.
- Step 4:** Replace the fuseholder in the housing and fix it.

Should you need any spare parts, please use genuine parts.

If the power supply cable of this device becomes damaged, it has to be replaced by authorized dealers only in order to avoid hazards.

Should you have further questions, please contact your dealer.

TECHNICAL SPECIFICATIONS

Power supply:	230 V AC, 50 Hz ~
Power consumption:	1,650 W
DMX-control-channels:	25
DMX-512-connection:	5-pin and 3-pin XLR
Flash-rate:	13 Hz
Colour-system:	CMY colour-mixture
Colour-wheel:	4 colours, 4 gobos, CTB and white
Colour temperature:	2900 K - 6000 K
Rotating gobo-wheel 1:	5 gobos and open
Rotating gobo-wheel 2:	5 gobos and open
Outside diameter of the gobos:	37.4 mm
Image diameter of the gobos:	31 mm
Maximum PAN-movement 540°:	in 3.5 s
Maximum TILT-movement 265°:	in 2.5 s
Length of base (including handles):	600 mm
Width of yoke:	530 mm
Height (head horizontal):	630 mm
Weight (net):	63 kg
Maximum ambient temperature t_a :	45° C
Maximum housing temperature t_b (steady state):	100° C
Min.distance from flammable surfaces:	0.5 m
Min.distance to lighted object:	0.5 m
Fuse:	F 15 A, 250 V
Accessory:	
PHILIPS MSR 1200SA 5600K GY-22 750h	No. 89109016
FUTURELIGHT CP-256/64 controller 16bit	No. 51834288
FUTURELIGHT CP-512/64 controller 16bit	No. 51834295
Wizard-512 USB DMX-Software + Interface	No. 51860102
Wizard-1024 USB DMX-Software + Interface	No. 51860110
FUTURELIGHT ISP Upload Set	No. 51836901
Flightcase for 1x PHS-1200 incl.reelboard	No. 51836869
FUTURELIGHT DES-3 DMX-terminator 3-pin	No. 51834001

Please note: Every information is subject to change without prior notice. 14.12.2005 ©